AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method, comprising:

receiving a coordinate value associated with a Trellis decoder, the received coordinate value including an integer portion and a fractional portion;

evaluating [the] a least significant bit of the integer portion; and

calculating a difference between the received coordinate value and a pre-determined coordinate value based on the fractional portion and said evaluation.

2. (original) The method of claim 1, wherein the received coordinate value comprises one of an X axis value and a Y axis value.

3. (original) The method of claim 1, wherein said evaluation comprises determining whether the least significant bit of the integer portion is a zero or a one.

4. (original) The method of claim 3, wherein the pre-determined coordinate value is an odd number and said calculating comprises, when the least significant bit of the integer portion is a zero:

setting the difference to one plus the fractional portion.

5. (original) The method of claim 3, wherein the pre-determined coordinate value is an odd number and said calculating comprises, when the least significant bit of the integer portion is a zero:

setting the difference to one minus the fractional portion.

6. (original) The method of claim 3, wherein the pre-determined coordinate value is an odd number and said calculating comprises, when the least significant bit of the integer portion is a one:

setting the difference to the fractional portion.

7. (original) The method of claim 3, wherein the pre-determined coordinate value is an odd number and said calculating comprises, when the least significant bit of the integer portion is a one:

setting the difference to two minus the fractional portion.

8. (original) The method of claim 1, further comprising:

determining a distance value associated with a distance between a received coordinate location and a pre-determined constellation point based at least in part on the difference.

9. (original) The method of claim 8, further comprising:

performing a Trellis decoding process based at least in part on the distance value.

10. (currently amended) A method, comprising:

receiving an X coordinate value associated with a Trellis decoder, wherein the received X coordinate value ~~including~~ comprises an X integer portion and an X fractional portion;

setting a first X difference between the received X coordinate value and a first pre-determined X coordinate value to one plus the X fractional portion when [the] a least significant bit of the X integer portion is a zero;

setting a second X difference between the received X coordinate value and a second pre-determined X coordinate value to one minus the X fractional portion when the least significant bit of the X integer portion is [a] zero;

setting the first X difference ~~between the received X coordinate value and the first pre-determined X coordinate value~~ to the X fractional portion when the least significant bit of the X integer portion is [a] one; and

setting the second X difference to two minus the X fractional portion when the least significant bit of the X integer portion is [a] one.

11. (currently amended) The method of claim 10, further comprising:

receiving a Y coordinate value associated with the Trellis decoder, wherein the received Y coordinate value comprises a Y integer portion and a Y fractional portion;

setting a first Y difference between the received Y coordinate value and a first pre-determined Y coordinate value to one plus the Y fractional portion when a least significant bit of the Y integer portion is a zero;

setting a second Y difference between the received Y coordinate value and a second pre-determined Y coordinate value to one minus the Y fractional portion when the least significant bit of the Y integer portion is zero;

setting the first Y difference to the Y fractional portion when the least significant bit of the Y integer portion is one; and

setting the second Y difference to two minus the Y fractional portion when the least significant bit of the Y integer portion is one;

determining a first distance based on the first X difference and the first Y difference;

determining a second distance based on the second X difference and the second Y difference; and

performing a Trellis decoding process based at least in part on the determined first and second distance values.

12. (currently amended) An apparatus, comprising:

an input path to receive a coordinate value associated with a Trellis decoder, the received coordinate value including an integer portion and a fractional portion; and

a multiplexer to receive (i) the fractional portion, (ii) [a] the fractional portion plus one, and (iii) the least significant bit of the integer portion as a control signal.

13. (original) The apparatus of claim 12, further comprising:

a multiplexer to receive (i) one minus the fractional portion, (ii) two minus the fractional portion, and (iii) the least significant bit of the integer portion as a control signal.

14. (currently amended) ~~An apparatus, comprising:~~

[a] A computer-readable storage medium having stored thereon instructions that when executed by a machine result in the following:

receiving a coordinate value associated with a Trellis decoder, the received coordinate value including an integer portion and a fractional portion,

evaluating [the] a least significant bit of the integer portion, and

calculating a difference between the received coordinate value and a pre-determined coordinate value based on the fractional portion and said evaluation.

15. (original) The apparatus of claim 14, wherein the received coordinate value comprises one of an X axis value and a Y axis value.

16. (currently amended) A method, comprising:

receiving an X value and a Y value representing differences between a received location and a pre-determined constellation point associated with a Trellis decoder; and

estimating a distance between the received location and the pre-determined constellation point based on one of the X and Y values, wherein said estimating comprises:

estimating the distance as the X value multiplied by a pre-determined value when the X value is larger than the Y value, and

estimating the distance as the Y value multiplied by the pre-determined value when the Y value is larger than the X value.

17. (canceled).

18. (currently amended) The method of claim [17] 16, wherein said estimating when the X value is larger than the Y value comprises:

left shifting the X value a pre-determined number of bits;

adding (i) the shifted X value to (ii) the X value multiplied by a pre-determined constant; and

right shifting the result of the addition a pre-determined number of bits.

19. (currently amended) The method of claim [17] 16, wherein said estimating when the Y value is larger than the X value comprises:

left shifting the Y value a pre-determined number of bits;

adding (i) the shifted Y value to (ii) the Y value multiplied by a pre-determined constant; and

right shifting the result of the addition a pre-determined number of bits.

20. (currently amended) A modem, comprising:

an asynchronous digital subscriber line data pump, including:

an input path to receive a coordinate value associated with a Trellis decoder, the received coordinate value including an integer portion and a fractional portion, and

a multiplexer to receive (i) the fractional portion, (ii) [a] the fractional portion plus one, and (iii) the least significant bit of the integer portion as a control signal; and

an Ethernet interface.

21. (original) The modem of claim 20, wherein the data pump further comprises:

a multiplexer to receive (i) one minus the fractional portion, (ii) two minus the fractional portion, and (iii) the least significant bit of the integer portion as a control signal.

22. (currently amended) A digital subscriber line access multiplexer, comprising:

a modem, including:

an input path to receive a coordinate value associated with a Trellis decoder, the received coordinate value including an integer portion and a fractional portion, and

a multiplexer to receive (i) the fractional portion, (ii) [a] the fractional portion plus one, and (iii) the least significant bit of the integer portion as a control signal; and

an asynchronous transfer mode interface.

23. (original) The digital subscriber line access multiplexer of claim 22, wherein the modem further comprises:

a multiplexer to receive (i) one minus the fractional portion, (ii) two minus the fractional portion, and (iii) the least significant bit of the integer portion as a control signal.